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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/670,261 | 09/26/2000 | David W. Chew | 3123-336 | 4850 |

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EXAMINER

PEREZ, GUILLERMO

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/670,261

Applicant(s)

CHEW, DAVID W.

Examiner

Guillermo Perez

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-17,19,20,25,26 and 31-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5,11-15 and 31-50 is/are allowed.
- 6) ☒ Claim(s) 6,7,9,10,16,17,19,20 and 51-70 is/are rejected.
- 7) ☒ Claim(s) 25 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 6-7, 9-10, 16-17, 19-20, and 51-62, and 64-70 are rejected under 35 U.S.C. 102(e) as being anticipated by Rao (U. S. Pat. 6,040,650 which is a continuation in part of U. S. Pat. 5,982,069).

Referring to claim 6, Rao discloses a voice coil for a disk drive comprising:

a spiral winding of conductive material (figure 3) defining a flat band (figure 6) with a generally triangular shape (figure 3) with an open center, first and second active leg portions (31a, 31b) and an inactive leg portion (33),

a first curved corner portion connecting the first and second active leg portions,

a second curved corner portion connecting the first active leg portion with the inactive leg portion, and

a third curved corner portion connecting the second leg portion with the inactive leg portion, the cross-sectional area of the band varying along its length (figure 3).

Referring to claim 7, Rao discloses that the cross-sectional area of each of the segments that define the inactive leg portion is smaller than the cross-sectional area of

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each of the remaining segments that define the first and second active leg portions (*figure 3 of the '069 patent*).

Referring to claim 9, Rao discloses that the radius of curvature of the first curved corner portion is greater than the radius of curvature of the second and third curved corner portions (*figure 3 of the '650 patent*).

Referring to claim 10, Rao discloses that the radius of curvature of the second curved corner portion is equal to the radius of curvature of the third curved corner portion (*figure 3 of the '650 patent*).

Referring to claim 16, Rao discloses in combination with an actuator member in a disk drive,

a voice coil secured to a face of the actuator member, the voice coil comprising:

- a continuous spiral winding of wire defining a flat band with a generally triangular shape with an open center,
- first and second active leg portions and an inactive leg portion,
- a first curved corner portion connecting the first and second active leg portions,
- a second curved corner portion connecting the first active leg portion with the inactive leg portion, and
- a third curved corner portion connecting the second leg portion with the inactive leg portion, the cross-sectional area of the band varying along its length (*as explained for claim 6 above*).

Referring to claim 17, Rao discloses that the cross-sectional area of the segments that define the inactive leg portion is smaller than the cross-sectional area of the remaining segments (*as explained above for claim 7*).

Referring to claim 19, Rao discloses that the radius of curvature of the first curved corner portion is greater than the radius of curvature of the second and third curved corner portions (*as explained above for claim 9*).

Referring to claim 20, Rao discloses that the radius of curvature of the second curved corner portion is equal to the radius of curvature of the third curved corner portion (*as explained above for claim 10*).

Referring to claim 51, Rao discloses a voice coil for driving an actuator arm to various positions over a disk of a disk drive, the voice coil comprising:

- a spiral winding of conductive material defining a band with a generally triangular shape having an open center, wherein the spiral winding includes:

- a first active leg portion (31) defined by segments having a first cross-sectional area;

- a second active leg portion (31) defined by segments having a second cross-sectional area;

- an inactive leg portion (33) defined by segments having a third cross-sectional area, wherein

- the third cross-sectional area is smaller than the first cross-sectional area, and the third cross-sectional area is smaller than the second cross-sectional area (figure 3 of the '069 document);

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a first curved corner portion connecting the first and second active leg portions (31 in figure 1);

a second curved corner portion connecting the first active leg portion (31) and the inactive leg portion (33); and

a third curved corner portion connecting the second leg portion (31) and the inactive leg portion (33).

Referring to claim 52, Rao discloses that the spiral winding is a planar coil (see figure 3 of the '650 document).

Referring to claim 53, Rao discloses that the spiral winding, is a single-layer coil.

Referring to claim 54, Rao discloses that the spiral winding is a planar single-layer coil.

Referring to claim 55, Rao discloses that the spacing between each loop of the spiral winding remains substantially the same throughout the spiral winding (see figure 4 of the '069 reference).

Referring to claim 56, Rao discloses that the height of the spiral winding remains substantially the same throughout the spiral winding (figure 6 of the '650 document).

Referring to claim 57, Rao discloses that the spacing between each loop of the spiral winding remains substantially the same throughout the spiral winding, and the height of the spiral winding remains substantially the same throughout the spiral winding.

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Referring to claim 58, Rao discloses that a width of the segments defining the inactive leg portion (33) is substantially smaller than a width of the segments defining the first and second active leg portions (31 in figure 3 of the '069 document).

Referring to claim 59, Rao discloses that a width of the segments defining the first active leg portion is the same as a width of the segments defining the second active leg portion (figure 3 of the '069 document).

Referring to claim 60, Rao discloses that the cross-sectional area of the segments defining the inactive leg portion is substantially smaller than the cross-sectional area of the segments defining the first and second active leg portions.

Referring to claim 61, Rao discloses that the cross-sectional area of the segments defining the first active leg portion is the same as the cross-sectional area of the segments defining the second active leg portion.

Referring to claim 62, Rao discloses a top insulating layer and a bottom insulating layer, wherein the spiral winding is sandwiched between the top and bottom insulating layers (Figure 4 of the '069 document).

Referring to claim 64, Rao discloses that the top insulating layer is secured to the spiral winding by an adhesive (epoxy see claim 4 of '069).

Referring to claim 65, Rao discloses that the bottom-insulating layer is secured to the spiral winding by an adhesive.

Referring to claim 66, Rao discloses that the top and bottom insulating layers are secured to the spiral winding by adhesives.

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Referring to claim 67, Rao discloses a voice coil for driving an actuator arm to various positions over a disk of a disk drive, the voice coil comprising:

a spiral winding of conductive material defining a flat band with a generally triangular shape having an open center, wherein the spiral winding is adapted to interact with the magnetic field of permanent magnets of the disk drive, and the spiral winding is a continuous planar single-layer coil that includes:

a first active leg portion defined by segments having a first cross-sectional area;

a second active leg portion defined by segments having a second cross-sectional area;

an inactive leg portion defined by segments having a third cross-sectional area, wherein the third cross-sectional area is smaller than the first cross-sectional area, and

the third cross-sectional area is smaller than the second cross-sectional area;

a first curved corner portion connecting the first and second active leg portions;

a second curved corner portion connecting the first active leg portion and the inactive leg portion; and

a third curved corner portion connecting the second leg portion and the inactive leg portion.

Referring to claim 68, Rao discloses that the spacing between each loop of the spiral winding remains substantially the same throughout the spiral winding, and the height of the spiral winding remains substantially the same throughout the spiral winding.

Referring to claim 69, Rao discloses that the cross-sectional area of the segments defining the inactive leg portion is substantially smaller than the cross-sectional area of the segments defining the first and second active leg portions, and a cross-sectional area of the segments defining the first active leg portion is the same as a cross-sectional area of the segments defining the second active leg portion.

Referring to claim 69, Rao discloses a top insulating layer and a bottom insulating layer, wherein the spiral winding is sandwiched between the top and bottom insulating layers and secured to the top and bottom insulating layers by adhesives.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (U. S. Pat. 6,040,650 which is a continuation in part of U. S. Pat. 5,982,069) in view of Yamamoto (U. S. Pat. 4,728,390).

Rao substantially teaches the claimed invention except that it does not show that the first and second layers are polyimide.

Yamamoto discloses that the first and second layers are polyimide for the purpose of insulating the layers of conductive material (*column 3, lines 3-14*).

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It would have been obvious at the time the invention was made to modify the coil of Rao and provide it with the insulating material disclosed by Yamamoto for the purpose of insulating the layers of conductive material.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select polyimide as the insulator since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Allowable Subject Matter

Claims 1-5, 11-15, and 31-50 are allowed.

Claims 25-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed December 26, 2002 have been fully considered but they are not persuasive.

In response to applicant's arguments, the recitation "a voice coil for a disk drive" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190

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USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

In response to Applicant's argument that Rao does not include certain features of Applicant's invention, the limitations on which the Applicant relies (i.e., *permanent magnets are the stator and the voice coil is the rotor*) are not stated in the claims. It is the claims that define the claimed invention, and it is claims, not specifications that are anticipated or unpatentable. *Constant v. Advance Micro-devices Inc.*, 7 USPQ 2d 1064.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

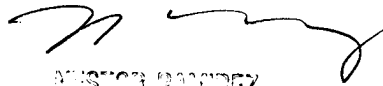
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
March 13, 2003



NESTOR RAMIREZ
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